

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-015566**Date Inspected:** 12-Jul-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1100**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1930**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

A). Field Splice W2/W3

B). Field Splice W5/W6

A). Field Splice W2/W3

The QAI observed the machining of the back gouged surface on the "B" face of the Complete Joint Penetration (CJP) groove identified as WN: 2W-3W-B1. The machining of the surface was performed by Hua Qiang Hwang ID-2930 to remove slag and carbon residue. The machining was performed utilizing a high cycle 4" grinder. At the conclusion of the initial machining the QAI observed the QC technician Tom Pasqualone perform a Magnetic Particle Test (MPT) and three linear indications were noted by the QC technician which will require additional grinding. The profile grinding was not completed during this shift.

The QAI observed the machining of the back gouged surface on the "B" face of the Complete Joint Penetration (CJP) groove identified as WN: 2W-3W-F1. The machining of the surface was performed by Jin Pei Wang ID-7299 utilizing a high cycle 4" grinder. The machining of the surface was not completed during this shift.

B). Field Splice W5/W6

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The QAI observed the welder James Zhen ID-6001 perform the continuous tack welding of the deck plate to the backing bar connection of the weld joint identified as WN: 5W-6W-A2 and A3. The welding was performed utilizing the Shielded Metal Arc Welding (SMAW) process as per the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-1200A, Rev. 1. The WPS was also used by the QC inspector, Steve McConnell, to monitor the in process welding and verify the welding parameters. The amperage was verified and recorded by the QC inspector as 135 amps. The QC inspector also verified the minimum preheat temperature of 60 degrees Celsius and a maximum interpass temperature of 230 degrees Celsius. The welding was performed in the horizontal (2F) position with the work positioned in an approximately horizontal plane and the weld metal deposited on the upper side horizontal surface and against the vertical surface. The QAI also monitored the planar alignment of the deck plate at random intervals.

The QAI also The QAI observed the Flux Cored Arc Welding (FCAW-G) of the bottom plate field splice identified as Weld Number (WN): 5W-6W-D, Segment D2. The Complete Joint Penetration (CJP) groove welding was performed by welding personnel Xiao Jian Wan ID-9677 utilizing the Welding Procedure Specification (WPS) ABF-WPS-D15-3040A-1 Rev. 0. The WPS was also used as a reference by the AB/F Quality Control (QC) Inspector Bonifacio Daquinag, Jr. during QC verification of the Direct Current Electrode Positive (DCEP) welding parameters during the CJP welding. The groove joint appeared to comply with the AWS joint designation identified as B-U2a-GF. The QAI also observed the QC inspector verify the average welding parameters and were observed as follows: 233 amps, 22.8 volts and a travel speed measured at 356mm/minute. The QC inspector also monitored the surface temperatures during the field welding and the following was observed and noted by the QAI: the minimum preheat temperature of 60 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius.

QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the FCAW-G and SMAW processes appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The digital photographs on page 3 of this report illustrate the work observed during this scheduled shift.

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Summary of Conversations:

No pertinent conversations were discussed in regards to this project during the scheduled shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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| Inspected By: | Reyes,Danny | Quality Assurance Inspector |
| Reviewed By: | Levell,Bill | QA Reviewer |
